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Patrick C. Keane  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
P.O. Box 1404  
Alexandria, VA 22313-1404

EXAMINER

AMARI, ALESSANDRO V

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 09/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/832,833

Applicant(s)

AMON ET AL.

Examiner

Alessandro V. Amari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,13-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,13-15 and 17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01 August 2003 has been entered.

### ***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: On page 5 of the specification, there is no description or definition of the following terms for equation 1:  $G$ ,  $\lambda$ ,  $L_i$ ,  $N_\lambda$  and  $Y$ .

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 4, 6, 7, 13-15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Chipper US Patent 6,018,414.

In regard to claim 1, Chipper discloses (see Figures 2A and 2B) an infrared (IR) lens comprising: a first surface (left side of 32); and a second surface (right side of 32),

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wherein the IR lens is a moldable IR transmissive material as described in column 5, lines 63-67 and column 7, lines 28-29 and one of a first surface and a second surface includes a kinoform superimposed on an aspheric surface as described in column 6, lines 52-55, column 7, lines 60-63 and column 9, lines 40-47; wherein the one surface with the kinoform superimposed on the aspherical surface is defined by the claimed equation as described in column 8, lines 2-67 and column 9, lines 1-16. It should be noted that the claimed equation is seen to be an inherent teaching of the infrared lens as shown by the equation for a diffractive surface described in column 8, lines 28-34.

Regarding claim 3, wherein one surface relief with the kinoform superimposed on the aspheric surface is formed directly in a molding operation as described in column 7, lines 28-35 and column 9, lines 40-47, however, it should be noted that if a product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. [*In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966].

Regarding claim 4, Chipper discloses that the moldable IR transmissive material is a chalcogenide glass as described in column 6, lines 12-16.

Regarding claim 6, wherein the lens is manufactured as a unitary structure in a molding operation as described in column 7, lines 28-35 and column 9, lines 40-47, however, it should be noted that if a product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. [*In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966].

In regard to claim 7, Chipper discloses (see Figures 2A and 2B) an infrared (IR) lens comprising: a first surface (left side of 32); and a second surface (right side of 32), wherein the IR lens is made from a moldable IR transmissive material as described in column 5, lines 63-67 and column 7, lines 28-35 and wherein one of the first surface and the second surface includes a kinoform superimposed on an aspheric surface as described in column 6, lines 52-55, the one first surface or second surface molded from the moldable IR transmissive material as described in column 7, lines 60-63 and column 9, lines 40-47 wherein the one first surface or one second surface with the kinoform superimposed on the aspherical surface is defined by the claimed equation as described in column 8, lines 2-67 and column 9, lines 1-16. It should be noted that the claimed equation is seen to be an inherent teaching of the infrared lens as shown by the equation for a diffractive surface described in column 8, lines 28-34.

In regard to claim 13, Chipper discloses (see Figures 2A and 2B) an infrared IR lens comprising: a first aspherical surface (32); and a second surface (42), wherein the first aspherical surface as described in column 6, lines 52-55 is superimposed with a kinoform, as described in column 7, lines 60-63 and, wherein the lens is made from a moldable IR transmissive material as described in column 5, lines 63-67, column 7, lines 28-35 and column 9, lines 40-47 wherein the first aspherical surface with the kinoform superimposed on the aspherical surface is defined by the claimed equation as described in column 8, lines 2-67 and column 9, lines 1-16. It should be noted that the claimed equation is seen to be an inherent teaching of the infrared lens as shown by the equation for a diffractive surface described in column 8, lines 28-34.

Regarding claim 14, Chipper discloses that the moldable IR transmissive material is a chalcogenide glass as described in column 6, lines 12-16.

In regard to claim 15, Chipper discloses (see Figures 2A and 2B) an infrared imaging optical arrangement comprising: a first lens (32); and a second lens (38), wherein at least the first lens is made from a moldable infrared (IR) transmissive material as described in column 5, lines 63-67 and column 7, lines 28-35 and wherein at least the first lens has a kinoform superimposed on an aspheric surface on one of a first surface or a second surface as described in column 6, lines 52-55, column 7, lines 60-63 and column 9, lines 40-47; wherein the first lens with the kinoform superimposed on the aspherical surface is defined by the claimed equation as described in column 8, lines 2-67 and column 9, lines 1-16. It should be noted that the claimed equation is seen to be an inherent teaching of the infrared lens as shown by the equation for a diffractive surface described in column 8, lines 28-34.

Regarding claim 17, Chipper discloses that the moldable IR transmissive material is a chalcogenide glass as described in column 6, lines 12-16.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chipper U.S. Patent 6,018,414 in view of Lettington et al. U.S. Patent 4,154,503.

Regarding claims 5, 18 and 19, Chipper teaches the invention as set forth above but does not teach that the moldable IR transmissive material is an arsenic selenide glass.

Regarding claims 5, 18 and 19, Lettington et al. does teach that the moldable IR transmissive material is an arsenic selenide glass as described in column 4, lines 4-30.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize arsenic selenide glass as taught by Lettington et al. in the lens of Chipper in order to form lenses that transmit in the IR range.

### ***Response to Arguments***

7. Applicant's arguments filed 01 August 2003 have been fully considered but they are not persuasive.

The Applicant argues that the prior art, Chipper does not teach or suggest superimposing a kinoform on an aspheric surface and furthermore, that the lens of Chipper mathematically defined by the equation appearing at column 8, lines 28 et. seq. differs from Applicant's claimed mathematical representation of the kinoform superimposed on the aspheric surface.

In response to this argument, the Examiner would point out that Chipper does teach superimposing a kinoform on an aspheric surface as described in column 9, lines 40-47. Furthermore, the equation describing the lens surface appearing at column 8, lines 28-34 is mathematically the same as the Applicant's claimed mathematical representation. Comparing the applicant's claimed equation with Chipper's; one can see that the first part of the two equations (the first line of each equation) describing the

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refractive surface are identical. The second part of the two equations are also identical which can be shown by substituting the values for the diffractive lens 42 in Table 3 into the variables in Chipper's equation and in the Applicant's claimed equation for Z. Both parts of the equations (Chipper's and the Applicant's) simplify to describe a diffractive optical surface resulting in a step function whose surface is cut back an integer number of wavelengths. Thus the equation of Chipper for Z meets the Applicant's claimed equation for Z.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (703) 306-0533. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ava   
25 September 2003

  
MARK A. ROBINSON  
PRIMARY EXAMINER